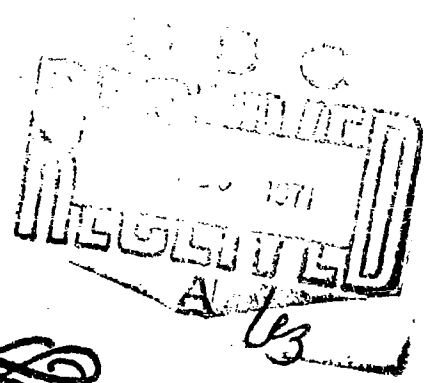


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Classification Management



**JOURNAL OF THE NATIONAL
CLASSIFICATION MANAGEMENT SOCIETY**

VOLUME IV No. 1 - 1968

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CONTENTS

Seminar Program	4
Classification in Russia ,..... <i>Zigurds L. Zile,</i> <i>Robert S. Sharlet,</i> <i>and Mrs. Jean F. Love</i>	7
Classifying Hardware ,..... <i>C. Donald Garrett</i>	15
The History of the Founding of NCMS ,..... <i>Richard L. Durham</i>	20
Organizing a Classification , Management Program <i>Gilbert C. Nowak</i>	23
Authors	26
Current Membership Listing	27

Published semiannually. Annual subscription, \$10. Editorial address: 9701 Fields Rd., No. 1802, Gaithersburg, Md. 20760. Views expressed by individuals in the *Journal* do not necessarily represent views of NCMS or of the individuals' employers.

PROGRAM
FOURTH ANNUAL SEMINAR

St. Francis Hotel, San Francisco

July 16 - 18, 1968

Tuesday, July 16

REGISTRATION

WELCOMING ADDRESSCivic Official

PRESIDENTIAL WELCOMELorimer F. McConnell
President, NCMS, System
Development Corporation

KEYNOTE ADDRESSDonald B. Woodbridge,
Union Carbide Nuclear Company

ADDRESSCharles L. Marshall
Atomic Energy Commission

PANEL — THE MAN IN THE MIDDLE

Moderator — Robert D. Donovan, United Technology Center.
Panelists — representing fields of technical editing, contract
administering, drafting.

**PANEL — FREEDOM OF INFORMATION VERSUS
CLASSIFICATION**

Moderator — Richard L. Durham, Arms Control and Dis-
armament Agency.
Panelists will be working newsmen and public affairs and
information field representatives.

Wednesday, July 17

APPLICATION AND UTILIZATION OF THE REVISED DD254

Francis W. May, Air Force Headquarters.

**COSTS OF COMPLIANCE WITH CONTRACTUALLY IMPOSED
CLASSIFICATION REQUIREMENTS.** Prepared by a cost
analysis firm, speaker to be announced.

**PANEL — CLASSIFIED RESEARCH IN THE UNIVERSITY
ENVIRONMENT**

Moderator — Robert D. Simmons, Leland Stanford University.
Panelists — representatives of universities and the Department
of Defense.

TRENDS IN CLASSIFICATION THINKING, George MacClain, Department of Defense.

PANEL — PREPARATION OF CLASSIFICATION GUIDANCE

Moderator — C. Donald Garrett, Department of Defense.
Panelists will be representatives of the various echelons of guidance-writing.

Thursday, July 18

COORDINATION BETWEEN DOD AND INDUSTRY IN APPLICATION OF CLASSIFICATION REQUIREMENTS, Willard Thompson, Space and Missile Systems Organization, U.S. Air Force.

PANEL — CLASSIFICATION MANAGEMENT IN INDUSTRY

Moderator — Kenneth E. Wilson, Sylvania Electronics Products, Inc. Panelists to be announced.

PANEL — IDENTIFICATION AND MARKING OF PROPRIETARY INFORMATION

Moderator — Lorimer F. McConnell.
Panelists to include representatives from fields of patent and copyright law.

BUSINESS MEETING

SEMINAR CRITIQUEParticipation by all
Seminar Chairman: Frederick J. Daigle, Lockheed Missiles and Space Company

Program Committee: Robert D. Donovan, United Technology Center
Robert D. Simmons, Leland Stanford University
Frederick J. Daigle

Facilities Manager: James A. Maneggic, Applied Technology, Inc.

Finance Manager: Robert D. Simmons

Publicity Manager: J. R. Rasmussen, Sylvania Electronic Systems

Registration and Hospitality Manager: Steven B. Dudley, Lockheed Missiles and Space Company

Recording and
Speakers Brochures Manager: Jack Kyne, Ampex Corporation

CLASSIFICATION IN RUSSIA†

by Zigurds L. Zile, Robert S. Sharlet, and Jean F. Love

Soviet secrecy laws establish a dual system of classification: one for the purpose of determining the type of handling to be given to documents in accordance with the information they contain; the other for the purpose of determining the sanction to be imposed for infringing the particular security level. The classification for purposes of handling—"Top Secret (*sovershenno sekretno*)," "Secret (*sekretno*)," "Not to be Made Public (*ne podlezhit razglasheniiu (oglashe-niiu)*)," "For Official Use (*dlia sluzheb-nogo pol'zovaniia*)" and possibly other, less formal categories—does not correspond to the classification for imposing sanctions—"State Secret (*gosudarstvennaia taina*)," "Military Secret (*voennaia taina*)," and "Official Secret (*sluzhebnaia taina*)."
[9, 5-6]

A state secret is defined as "information of state importance especially protected by the state." "It includes data of military, economic and foreign policy character." Official secrets constitute a category of security information other than state secrets. Military secrets appear to have amphibian traits. Many military secrets are also state secrets; the remainder (*i.e.*, all military documents and correspondence) partake of the nature of official secrets.

A currently cited list identifies the following broad categories of state

secrets, each of which might be classified at different levels for purposes of handling:

Information of a Military Nature Includes:

[1] mobilization plans and other documents containing general data on the preparation for mobilization of the country as a whole, of the armed forces, of the branches of the armed services, of the military districts, of the armies, fleets and flotillas, and also of all-union and union-republic ministries of the USSR and of enterprises of all-union significance;

[2] general information on places of storage, stockpiles and plans for stockpiling all types of state and mobilization reserves, and also individual types of products having defense or strategic significance as a whole for the USSR, the Main Administration of State Material Reserves attached to the Council of Ministers of the USSR and its territorial administrations;

[3] operative plans, general information on the location and number of troops, the amount of armaments and military equipment as a whole for the armed forces, the branches of the armed services, military districts, armies, fleets and flotillas.

[4] generalized data on the military training of the troops and the

†This article is extracted from "Legal Aspects of Verification in the Soviet Union," August 1967, which was prepared by the Law School, University of Wisconsin, for the U.S. Arms Control and Disarmament Agency. Conclusions set forth herein do not necessarily represent views of the University of Wisconsin or the U.S. Arms Control and Disarmament Agency.

state of discipline as a whole for the Ministry of Defense of the USSR, the Ministry of Internal Affairs of the USSR [now replaced by Ministry for Protection of Public Order] for the branches of the armed services, military districts and fleets;

[5] general information on the number under a military obligation in reserve as a whole for the USSR and for military districts, and also information on the recruitment of troops through regular draft calls as a whole for the armed forces of the USSR, the military districts, and the fleets;

[6] plans with descriptions, sketches and photographs of fortified regions, naval bases, central and district bases and supply pools of armaments and ammunition and also data on their armament and equipment;

[7] general information on the network of airports, on the quality and capacity of airports as a whole for the USSR. General information on defense, airport, base and special construction as a whole for the armed forces, military districts and fleets;

[8] plans of preparation for local antiaircraft defense of cities, major industrial, defense and special objectives;

[9] information on the state of the protection of the state frontier.

Information of an Economic Nature includes:

[10] general information on the location of military industry enterprises, production capacities and

plans for production of armaments, military equipment and ammunition and data on the fulfillment of the plans in concrete terms as a whole for the USSR, for all-union and union-republic ministries, chief administrations, and enterprises of all-union significance;

[11] general information on production capacities and plans of production of nonferrous, precious and rare metals and accounts of their fulfillment in concrete terms as a whole for the USSR, for the Ministry of Nonferrous Metallurgy of the USSR, the Ministry of Nonferrous Metallurgy of the Kazakh SSR and their chief administrations;

[12] information on underground reserves in the USSR of radioactive elements, on their extraction, on productive capacities and plans of production of radioactive and trans-uranium elements, and data on the fulfillment of the plans in absolute figures as a whole for the USSR, ministries, chief administrations and enterprises;

[13] information on the extent of underground reserves in the USSR of nonferrous, rare, and precious metals, titanium, diamonds and piezo-optic minerals as a whole for the USSR, ministries and major deposits and also petroleum as a whole for the Ministry of the Petroleum Industry of the USSR;

[14] discoveries and inventions of major military significance;

[15] discoveries and inventions of major scientific and economic significance before the grant by the

heads of ministries and departments of permission for their publication;

[16] the state of foreign currency reserves, information on the balance of payments, general data on state reserves and places of safe-keeping of precious metals and precious stones as a whole for the USSR;

[17] state codes [*i.e.*, cryptographic material];

[18] such other information as may be added by the Council of Ministers of the USSR to the list of matters subject to state secrecy. [10, 159-60]

The preceding list of state secrets is based on the Decree of the Council of Ministers of the USSR of April 28, 1956. The decree was issued as part of the Soviet criminal law reform that began a few years after Stalin's death. Although the first seventeen items add up to a list somewhat milder than the one contained in the Council's Decree of June 8, 1947, one must not lose sight of the fact that the enumeration is open-ended. In the words of the law itself, anything "may be added by the Council of Ministers of the USSR."

While the list would seem to reflect a predominantly military concern, actual Soviet practice is not so circumscribed. Secrecy regulations have been extended to cover many other types of information. This has been accomplished by adding them to the list of state secrets through item 18, tossing them into the basket of miscellaneous official secrets, or, finally, by developing restrictions outside the

standard categories which are especially tailored to suit the situation (e.g., the secrecy status of certain information *vis-à-vis* foreigners.) A recent study of Soviet economic secrecy notes that "the first indicators to be suppressed [beginning in the late 1920's] were those bearing upon the living standards of the population, directly or by implication. . . . [I]t was not until the latter years of the decade that the secrecy curtain began to be spread across the indicators measuring performance in the strategic sector of the economy." [6, 5]. Ever since the early 1930s, when The National Economic Plan of the USSR for the Year 1931 was stamped "not to be made public," the annual economic surveys and forecasts have been withheld from general circulation. The publication of annual volumes of economic statistics was resumed in 1956, but they continue to omit information on several vital subjects. Matters as diverse as taxation, trade union finances and price formation are under the wraps of secrecy. This suppression of economic information is carried to such ludicrous lengths that it becomes dysfunctional. If by reason of suppression of Soviet economic statistics, Soviet economists who are charged with engineering the country's economic progress must rely on the CIA reports for data, the wisdom of the secrecy policy is questionable. As the London *Economist* once put it, "[t]he Soviet leadership's problem is how to stop foreigners 'poking their noses' into Russian life without cutting off its own nose in the process." [11]

Certain books and other scientific and literary materials often are stored in special libraries or special collections within ordinary libraries. Many items are consigned to these collections merely because they contain politically unacceptable ideas. Foreigners often are denied access even to unclassified and domestically published information. This is a source of continuous frustration to the American participants in the cultural exchange program with the Soviet Union. The feeling is widespread that, insofar as the exchange of information is concerned, the program is essentially a one-way street. Access to basic data taken for granted by the community of scholars in the United States is denied to foreigners studying comparable problems in the Soviet context. An American economist in an attempt to exchange statistical information on transportation sent seven pounds of United States material to a Soviet counterpart, but received nothing in return. His experience is quite typical. For a decade after Stalin's death, non-Soviet social scientists found the dissertations of Soviet doctoral candidates to be valuable research materials. Since 1963, however, it has become increasingly difficult to gain access to them. Even the essential collection of Decrees and Orders of the Council of Ministers of the USSR is not mailed to the outside world on any systematic basis, to say nothing of ministerial and departmental regulations. Lawyers and experts representing Soviet interests in inheritance cases in the United States have been compelled to specu-

late on Soviet foreign currency regulations in the absence of any direct help from their counterparts in Moscow. Various periodicals, both technical and popular, though freely sold in the Soviet Union, are unavailable for subscription abroad. Foreign embassy publications procurement officers are constantly harassed and often physically prevented from making purchases of certain materials displayed on the open shelves of bookstores. This, of course, shades into the question of the classification of security information for handling purposes.

Unfortunately, little is known about the actual administration of the security classification system. The application of secrecy laws itself is by and large enveloped in secrecy. A glimpse of past practices is provided by document leaks which occurred during the Second World War. For example, a 1939 "Index for Determination of the Level of Secrecy of Materials Relating to Meteorology, Hydrology, Subterranean Waters, and Maritime Hydro-meteorology (for Peacetime Conditions)" describes in some detail the handling of relevant data concerning a specially described frontier zone.

The document suggests that, within a given department, security classification was determined by a "secret branch (*sekretnaia chast'*)" operating independently of the Chief Administration for Matters of Literature and Publishing Houses (*Glavnoe upravlenie po delam literatury i izdatel'sto* or *Glavlit* for short). At the time, the secret branch was a sub-

unit of the larger "special section (*spetsotdel*)" of the state security organ (NKVD), which had overall responsibility for the implementation of all security standards within a department, institution, enterprise or organization. In the case of interdepartmental security arrangements, the approval of all the affected departments had to be obtained. However, as the final approving agency, the NKVD had the decisive voice.

In the popular mind, *Glavlit* has been associated with the prior censorship of all publications aimed at general consumption, a function which it indeed had, at least until its full name was changed to Chief Administration for Protection of Military and State Secrets (apparently, in the 1950's). *Glavlit* was established and began operating under a Decree of June 6, 1922. Insofar as can be determined, the last collection of documents pertaining to this organization was published in 1937. More recent (*e.g.*, 1954 and 1961) editions of documents on the press entirely ignore censorship. Therefore, the 1922 decree may no longer be in effect. According to the original setup, however, *Glavlit's* work meshed to some extent with that of the secret (or political) police, which participated in naming one of the two *Glavlit* deputy heads and had the responsibility for combatting the distribution of publications not approved by *Glavlit*. Whether this arrangement has continued to exist since the change in *Glavlit's* title has not yet been determined. While it is generally thought by American special-

ists that the special sections live on under the aegis of the KGB, there is less certainty as to whether the functions of the secret branches have been transferred to *Glavlit* or to some other security agency.

The captured document of 1939 also gives insight into the publication of the security classifications up to the "secret" level. Here are a few examples of possible relevance to arms inspection:

(1) Information on the thickness of ice, the characteristics of the ice cover, and the location of open water (with the exception of bodies traversed by the state border): field notes—for official use; office compilations, manuscripts and publications—secret.

(2) The same information for bodies traversed by the state border—secret.

(3) Hydrologic descriptions and sketches of individual bodies of water and their basins: office compilations—for official use; manuscripts and publications—secret.

(4) Data on the network of stations studying subterranean water systems—for official use.

(5) Chemical and bacteriological analyses and sanitary evaluation of the subterranean waters: field notes and office compilations—for official use; manuscripts and publications—secret.

(6) Long-range and short-range forecasts of catastrophic [water] levels with an indication of the probable consequences (floods, drying up and so forth)—secret.

(7) Short-range forecasts of the

levels, ice-breaking and freezing of bodies of water (covering periods less than 10 days), without the right to radio broadcasting (covering periods not in excess of 5 days), with the exception of bodies of water traversed by the state border—unclassified (*ne sekretno*).

(8) The same information for bodies of water traversed by the state border—for official use.

(9) Velocity of the travel of sound in water, refraction and reflection of sound waves from the surface, and audibility in the Bering Sea, Pacific waters off Kamchatka, Sea of Okhotsk, Sea of Japan, Caspian Sea, Black Sea, Gulf of Finland, Barents Sea, White Sea, Sea of Chukotsk, Lake Ladoga, Lake Onega, Lake Peipus-Lake Pskov, and Lake Baikal: field notes—unclassified; office compilations, manuscripts and publications—for official use. The same information in the Sea of Azov, Kara Sea, Laptev Sea, East Siberian Sea, and Aral Sea—unclassified.

(10) Materials characterizing the profile (*rel'ef i grunty*) of the bottom to the depth of 300 meters in the bodies of water listed in the first group under (9): field notes and office compilations—for official use; manuscripts and publications—secret. The same information in the bodies of water listed in the second group under (9)—unclassified.

Prior to the Second World War, Soviet weather conditions in general (not just major weather phenomena affecting the frontier zone) were deemed security information. Domestic weather broadcasts were in secret

code. The outbreak of hostilities led the Soviet Union to modify this practice *vis-à-vis* its Western Allies. In connection with the Lend-Lease Act, the Soviets agreed in 1941 to exchange weather data between San Francisco and Khabarovsk. In 1942, with the establishment of the Alaskan-Siberian air link, an exchange of weather data was begun between Fairbanks and Irkutsk. By 1944, these scant beginnings had been broadened to comprise about one hundred weather stations on both continents which exchanged aerological data, outlines of weather maps, and long-range forecasts. The United States military mission also asked for and received some information on Soviet cold-weather equipment, tactical methods in river crossing, and certain types of intelligence information concerning the Germans. On the other hand, "[t]he bases for allocating UNRRA supplies for food rationing were never released to the UNRRA missions, since they were determined on an all-union basis and were considered as highly strategic data." [13, 247-48]. The released information was probably classified "No to Be Made Public" or "For Official Use" within the limited area and for the duration of the emergency. That which was retained under wraps was probably classified at a higher level of secrecy.

An example of the use of the classifications "Secret" and "Top Secret" in current practice may be found in the USSR Statute on Discoveries, Inventions and Rationalization Proposals of April 24, 1959:

Art. 58. Discoveries, inventions

and rationalization proposals related to national defense are regarded as secret [information].

Other discoveries, inventions and rationalization proposals are also regarded as secret if their preservation in secrecy is necessary in the interests of the state.

The Committee on Matters of Invention and Discovery under the Council of Ministers of the USSR or any other agency which receives an application relating to a discovery, invention or rationalization proposal must determine in each individual case whether the proposed discovery, invention or rationalization proposal is secret

Art. 59. Applications related to secret and top secret discoveries and inventions, with the exception of top secret discoveries or inventions related to new types of armaments, military equipment or their tactical application, are received and considered by the Committee on Matters of Invention and Discovery under the Council of Ministers of the USSR.

Art. 60. Applications dealing with top secret inventions related to new types of armaments, military equipment or their tactical application are received and considered by the Ministry of Defense of the USSR [SP SSSR 1959, no. 9, text 59]

Information about bank accounts, various notarized transactions, public correspondence, voting, preliminary investigations and communications to lawyers and physicians are under the secrecy laws. It would appear that such matters are generally classified as "Not to Be Made Public" or "For

Official Use." This does not mean, of course, that properly authorized officials are denied access to this class of information.

Side by side with the secrecy imposed and maintained for the benefit of the formal state apparatus, there exists a separate system of secrecy within the Communist Party. However because of the peculiar ties between the state and the Party, the two theoretically distinct systems of secrecy may be treated as one for many practical purposes. While the Soviet legal system is expressly concerned only with state, military and official secrecy, in reality the state and the Party maintain a joint monopoly of all important facilities for the collection, preservation and dissemination of information. Of course, if violations occur solely within the Party system of secrecy, inner-Party, and not state sanctions are imposed.

Reference List and Selected Bibliography

1. Akhmetshin, Kh. M. *Okhrana gosudarstvennoi тайны—dolг sovetskikh grazhdan (The Protection of State Secrets—A Duty of Soviet Citizens)*. Moscow, 1954.
2. Berman, Harold J. and Peter B. Maggs. *Legal Aspects of Verification in the Soviet Union*. Washington, 1964. (Report for the U.S. Arms Control and Disarmament Agency.)
3. Deane, John R. *Strange Alliance*. New York, 1947.
4. Friedberg, Maurice. "Keeping Up with the Censor," *Problems of*

- Communism*, XIII (November, 1964), 22-31.
5. Ginsburgs, George and Armins Ruis. "Soviet Criminal Law and the Protection of State Secrets," in *Law in Eastern Europe*, ed. Z. Szirmai, vol. VII, pp. 3-48. Leyden, 1963.
 6. Herman, Leon M. *Varieties of Economic Secrecy in the Soviet Union*. Santa Monica, 1963. (RAND Study P-2840.)
 7. Herman, Leon M. "Figures Unfit to Print," *Problems of Communism*, XIII (November, 1964), 14-22.
 8. Hunter, Holland. "Going Places in the USSR. Transportation: Discussions and Interviews," *Soviet Survey*, No. 34 (1960), 80-89.
 9. Maggs, Peter B. *Non-Military Secrecy under Soviet Law*. Santa Monica, 1964. (RAND Study P-2856.)
 10. Prokuratura Soiuza SSSR (Prosecution of the USSR). *Nauchno-prakticheskii kommentarii Ugo-lovnogo kodeksa RSFSR (Scholarly-Practical Commentary to the Criminal Code of the RSFSR)*, ed. B. S. Nikiforov. 2nd ed. Moscow, 1964.
 11. "Soviet Union. Whose Nose?" *Economist*, CCIX (1963), 747.
 12. Stevenson, Eric. *The Implications for Arms Control and Disarmament of the United States Exchanges Program with the Soviet Union and Eastern Europe*. Washington, 1966. (Report for the U.S. Arms Control and Disarmament Agency.)
 13. *UNRRA: The History of the United Nations Relief and Rehabilitation Administration*, ed. George Woodbridge, vol. 2. New York, 1950.

CLASSIFYING HARDWARE

by C. Donald Garrett

Classification managers rightfully emphasize the necessity of identifying and classifying items of *information*, rather than things. To be practical about it, however, in many operational circumstances the operator is interested only in *whether* the thing he is making or handling is classified and he is not concerned with *why* it's classified. All the handler wants to know and, really, needs to know in many situations, is what level of classification applies to the thing he has. The business of classifying hardware involves very practical applications of accepted classification principles. It is the purpose of this article to explore some of the possibilities.

Hardware items are the physical things that comprise or make up an end product of military equipment, beginning with basic materials, through parts, components, subassemblies, and assemblies to the final end item.

We Classify Information

There are certain fundamentals that need to be expressed and understood at the start. First of all, it is *information* that is classified. If this maxim is kept foremost in mind, then the problem of deciding what and when hardware items are to be classified becomes, in a sense, mechanical.

Second, things, documents, and hardware, are classified *only* because they contain *and* reveal classified information. Now there are certainly many instances when the mere exis-

tence of a particular operable piece of equipment warrants classification. Certainly. But why? Because the equipment will do certain things or because it is available at a given place at a given time and gives our troops an advantage over an enemy. But the equipment is classified not because it is a piece of hardware but because of what it will do or because it is available to do it. The gist of this is that the existence of the equipment reveals some classified information and that's why it's classified, not just because it is a super-duper piece of equipment.

Third, not all materials, parts, components, subassemblies, and assemblies that make up classified equipments or systems have to be classified. As a matter of fact, in many, if not most, instances most materials, parts and components, and some subassemblies and assemblies are off-the-shelf items and unclassified.

Fourth, a commercially openly available item of hardware considered by itself can *never* be classified. This is a rather broad statement that needs some clarification because there are certainly many instances (like tubes and crystals and frequencies) wherein the mere association of a specifically identified item with an identified military equipment can reveal classified information pertaining to the equipment. Also, an otherwise unclassified item may be used in a unique way or modified for a specific

military application that warrants classification. These points will be developed more later.

Lastly, security costs money, time, and effort. Our security resources must be preserved and used to protect only what really needs protection. It behooves everyone involved, therefore, to make sure that classification is applied only when necessary to ensure protection against unauthorized disclosures of classified information.

Not Just Academic

This business of being careful in the classification of hardware is not just an academic exercise—it's a matter of considerable actual dollar and cents savings. One industrial concern has figured that it costs *eleven times* as much to ship classified hardware items as unclassified. One firm reported saving \$300 shipping costs on each of 250 units because it was decided to be possible to procure unclassified instead of classified. A \$75,000 savings is certainly worthwhile. A Government agency saved \$150,000 which had been requested to cover security costs, in connection with a \$500,000 contract, because it was determined that the particular component concerned could be procured unclassified, thereby making it unnecessary to clear the contractor's production employees, to establish a restricted area in the contractor's plant, or to ship the component classified. Through concerted efforts and cooperation, a prime contractor and the DOD customer declassified all hardware items of a particular system; in another, 29 of 42 major components were declassified; and in a fourth, 17

of 35 major components were declassified. These are just a few concrete examples of real honest-to-goodness savings resulting from good hardware classification practices.

One of the first things to keep in mind is to distinguish between classified information that must be put into the paperwork that is a part of the procurement process, and the classified information that is contained in the hardware items themselves. Also, too much classified information is often put into procurement papers.

For example, standards and specs for hardware items by themselves usually do not need to be classified unless they are expressive of special, unique, or unusual qualities. Sometimes those standards and specs express the operating limits of the equipment in which the hardware items are to be used. Even if those operating limits are classified, it does not necessarily mean that the hardware items themselves, as separate things, must also be classified.

In these cases, the standards and specs would, of course, have to be put into the procurement documents. They probably would be ascertainable from the hardware items themselves. Consequently, if those standards and specs inherently warrant classification because of their special or unusual nature or uniqueness, then the procurement papers containing them and the hardware items would have to be classified.

Key Is What's Revealed

If, on the other hand, the standards and specs warrant classification only

because they reveal classified operating capabilities of the military equipment in which the hardware items are to be used, then procurement papers containing those standards and specs would be classified but the hardware items would not be classified.

Tubes and crystals and frequencies exemplify this point. Hundreds of tubes, many unclassified to start with, and crystals, nearly all of which are unclassified, are used in classified electronic equipment. Those things determine frequencies. Operating frequencies are often classified and rightfully so. The tube and crystal frequencies are readily available in the manufacturers' catalogs. Alert intelligence agents are trained to look for such simple connections as an identified unclassified tube or crystal with an identified military system. The classified information can be easily compromised unless people are alert and take care not to permit releases of the frequencies, or the identified tubes or crystals, in association with the military equipment.

In such cases, the procurement papers would *not* have to be classified necessarily. If the papers identify the system, and its operating frequencies are classified, then these procurement papers would have to be classified, but the tubes or crystals still would *not* be classified. There is no logical reason why a purchase order cannot be made out for a given quantity of x-type tubes or crystals with no mention whatever of the system in which they are to be used or the prime or sub-contract to which they pertain. Other

records can be maintained at the plant for costing and audit purposes.

Modified Components

Another example would be an unclassified openly commercially available part or component that is modified for use in a particular military equipment. Suppose that the modification is obviously unique and unusual. This is still no reason to classify that modified hardware item. The modified item must still be the source of some kind of national defense advantage resulting from the equipment in which it is used. Suppose that it does supply some such advantage worthy of security protection. This still does not require that the modified hardware item must be classified. Here again the classifiable information is not the hardware item itself, but, rather, what it does in or for the equipment in which it is used. Any documentation revealing the association of that modified hardware item with the military equipment would be classified, but only if through that association the classified information pertaining to the equipment would be disclosed. The important point here is to recognize when it is an association or connection that reveals classified information, and then to break that chain of association completely or to classify whatever it is that reveals the association.

In the foregoing cases, the emphasis is on classifying information contained in documentation. If the hardware items, themselves, do not reveal any classified information, they do not warrant or require security protection.

One-Product Situation

A shipment of a particular identified hardware item, like a tube or crystal, to a manufacturer which is producing only one classified military equipment might reveal the classified operating frequency of that military equipment. This still does not mean that the hardware item must be classified but, rather, the fact of shipment, the documentation identifying what is being shipped, etc., would reveal the classified information. That's what should be classified. Here again, the important thing is to recognize, first, what is classified and, second, what and how that classified information can be revealed.

In the actual process of production engineering, not all of the plans, drawings, blueprints, and other production papers have to be classified. It is essential to understand exactly what information the customer has said is classified. Each plan, drawing, blueprint, and other engineering and production paper must be reviewed individually to see *whether* classified information is actually revealed. By removing all unnecessary data that may reveal classified information, lots of those papers will be unclassified.

Through careful management in this production engineering process and the preparation of "family tree" diagrams showing how all the parts and components fit together, it is possible to determine exactly which elements will reveal classified information. Associations between parts, components and assemblies that reveal classified information can be identified. By determining exactly

what and when classified information is revealed, precise determinations can and must be made as to the individual hardware items that must be classified, the last possible moment in the production process when classified hardware items must be introduced, and the circumstances under which classified information is actually revealed by the assembled hardware.

After the engineering and production processes have been carefully worked out, a listing should be made of all hardware items—by part number or other identifier—that have to be classified, the levels of classification, and those that are unclassified. Such a listing, together with a clear understanding of associations, between hardware items and the finished end product that could reveal classified information, will provide procurement people with a means of reducing costs quite materially by maximum procurement of unclassified hardware items. Logistics personnel (shipping, handling and storage) will be able to identify what and when hardware items require security protection, thus also reducing logistics costs very materially.

Practical Considerations

In most cases classified information can be obtained from hardware items only by dismantling, technical analysis, test or operation. Only in a few cases can classified information be obtained from visual access. In many cases, not only must physical access be possible, but there must be an opportunity to dismantle, analyze, test or operate. Technical knowledge is required to determine what the in-

formation is that is revealed. Often elaborate test or calibration equipment is needed to determine from the hardware item information in sufficiently precise quantities or qualities to require classification.

All of the foregoing suggests that in production line operations, where the classified information is *not* included in the accompanying production papers, it is practical to arrange matters so that it is not possible for anyone to spend the time and effort necessary to determine the classified information. In other words, the production line can be set up so that classified information is not revealed under any circumstances. That production process can then be carried out securely without imposing classification procedures except on the final end item.

Even end items that contain classified information may not have to be classified because the classified information is inaccessible to anyone. Ordinarily, such equipment is sufficiently valuable that controls are imposed to prevent pilferage, sabotage, clandestine tampering, or unauthorized physical access. When such controls effectively *preclude* access to the equipment under conditions permitting revelation of the classified information involved, then classification of the inclusive equipment would be necessary only at the level required to protect classified information that could be obtained by visual access. Physical controls which preclude access to the degree necessary to ascertain the classified information contained in a hardware item can

take the place of controls imposed to protect classified information.

Test Equipment

Test equipment is often standard. By itself it is not classified. When test equipment is set or calibrated to test tolerances, specifications, performance, or other details that are classified, then classification must be considered. If any of that test data is classified, then the calibrated test equipment must be treated as classified, but only so long as the test equipment reveals the classified information. It is important in such cases to ensure that the paperwork used by the operators of the test equipment is classified, that the calibrated test equipment is protected to the degree necessary to preclude disclosure of the calibrated data and that the calibrated data is removed from the test equipment whenever consistent with operating requirements.

In Summary

The foregoing covers most, but not all, of the matters to keep in mind when classifying hardware. In summary, good classification management practices can materially:

- a. Improve the quality of classification determinations at all levels of the hardware procurement and production processes.
- b. Reduce quantities of classified documentation and material.
- c. Reduce the numbers of hardware items that are procured classified.
- d. Limit the amount of classified information put into procure-

ment and production documentation.

e. Reduce security costs associated with shipping, handling and

storage of classified hardware.

f. And overall, give us more security for a buck.

THE HISTORY OF THE FOUNDING OF NCMS

by Richard L. Durham

Over the years since the incorporation of the National Classification Management Society as a professional nonprofit organization, there have been many comments, both in the press and orally, giving the impression that our Society was established by a splinter group of the American Society for Industrial Security (ASIS). To set the record straight, and, hopefully, to interest the readers of the *Journal* who are of a historical bent, I shall attempt to summarize the history of the founding of our Society.

Early in the spring of 1963, a need was recognized for improving communications between the classification people of the nuclear design laboratories and those of the nuclear production agencies. It was at this time that the idea was conceived of establishing a professional society in the field of security classification management.

First Discussions

Discussions were held that spring with James Ruff, then classification officer at Lawrence Radiation Laboratory, Livermore, California, and with our mutual colleague, Dr. Leslie M. Redman of the Los Alamos Scientific Laboratory in New Mexico.

I was then classification officer, Sandia Corporation, Livermore Laboratory, California. It was agreed among the three of us that this would be an appropriate item for discussion at the first meeting of the Weapon Contractors Classification Conference (WCCC) working group which was to be held June 4 and 5, 1963, at the Bendix Corporation's Kansas City Division.

In attendance at that first meeting of the WCCC were: James Marsh, classification officer, and Charles Prohaska, classification analyst, Sandia Corporation, Albuquerque; Les Redman; Donald Woodbridge and Robert Dreyer, classification officers, Union Carbide Nuclear Company, Oak Ridge, Tennessee; Edward Calvert, classification officer, South Albuquerque Works, AFC Industries Incorporated; James Bunch, classification officer, Pantex Company, Amarillo, Texas; our host for the first meeting, Jack Long, classification officer, Bendix Corporation, Kansas City Division; and myself.

On June 5, 1963, the second day of the meeting, we discussed the idea of forming a professional classification management society. Everyone there felt that it was worth looking into.

ASIS Affiliation Discussed

Considerable discussion then ensued as to the advisability of associating our organization with ASIS. The group agreed that an approach would be made to the western representatives of ASIS to solicit their views, and, hopefully, through them, the views of the national officers of ASIS on the feasibility and advisability of associating our organization with theirs.

It was further agreed that we should talk to DOD contractor classification personnel. It was suggested that a meeting could be arranged for this purpose at the close of the second meeting of WCCC, which was scheduled for November 19 and 20, 1963, at Sandia Corporation, Livermore Laboratory.

In the time between June 5 and November 19, contact was made with DOD contractor people and with an ASIS chapter officer, who agreed to raise the question with the appropriate people in ASIS. No response was received from ASIS by November 19.

Organizational Meeting

The contact with DOD contractor personnel was most fruitful, however, and on the afternoon of November 20, 1963, in the conference room of Sandia Corporation, Livermore, twenty-three classification representatives from DOD contractors, AEC contractors and field classification personnel of the AEC met, considered the idea favorably, and organized a steering committee. The *ad hoc* steering committee consisted of John

Shunny, Sandia Corporation, Albuquerque; Robert Rushing, Lockheed Missiles and Space Company, Sunnyvale, California; William Herling, Space Technology Laboratory, Redondo Beach, California, and myself. John Shunny was named chairman, and I was secretary-treasurer.

The first duty of the steering committee was to draft bylaws. The steering committee was also charged with selection of a name for the organization. Also during the meeting, it was suggested that those present contribute \$10 to help build a treasury to cover initial costs. It was agreed that the initiation fee to the Society would be \$10 and the membership fee \$10 a year. (Figures that have not changed in five years!)

First Members

As of December 18, 1963, the following were considered the very first charter members of the Society: John Shunny, Ed Calvert, James Patterson, then of Sandia, Livermore Laboratory; John Wise, Fred Daigle, Lyle Dunwoody, and Bob Rushing, all of Lockheed Missiles and Space Company, Sunnyvale; and I.

By December 18, the steering committee had agreed, after considerable cogitation, on the official title of "National Classification Management Society," and the draft bylaws were published and disseminated to the charter members and prospective charter members.

The main driving forces during the initial founding phase prior to the incorporation of the Society were, in

my opinion, John Shunny and Bob Rushing.

On December 18, I tendered my resignation as secretary-treasurer, turning over those duties to Ed Calvert, but I maintained my membership on the *ad hoc* committee while I moved from Sandia Livermore to the Arms Control and Disarmament Agency in Washington, D. C.

By January 16, 1964, the formal charter members had grown by the addition of Jim Marsh, and Lorry McConnell of Systems Development Corporation, Santa Monica, California. Major A. A. Correia, then of Norton AFB, California, became the first military member, in February, and Francis W. May, of Air Force Headquarters, joined in March and was the first government civilian employee to become a member.

Legally Incorporated

On March 31, 1964, the Society was incorporated as a nonprofit professional society under the laws of the state of New Mexico and, as such, the Society formally and legally came into being.

During the period from January through June, extensive recruitment was undertaken by the *ad hoc* committee, and tentative plans were made for the first Society Journal and the first seminar of the Society. Much of the heavy letter writing in this period to prospective new members was accomplished by John Shunny and Bob Rushing. As of May 13, 1964, the

Society had grown to 35 charter members, and the treasury held \$495. On August 11, 1964, a letter was sent to all charter members of NCMS furnishing a slate of officers for the initial NCMS directorships.

On September 17, 1964, the ballots had been counted and the Board of Directors was selected as follows: Bob Rushing, Don Woodbridge, Tony Correia, Les Redman, Bill Herling, Bob Niles of Defense Atomic Support Agency, and I. Rushing and I were named to terms of three years, Woodbridge and Correia two years, and the others one year.

From among the board, officers were elected on October 6, 1964, as follows: Don Woodbridge was named Chairman of the Board; Bob Rushing, President; I was elected Vice President; and Bill Herling, Secretary-Treasurer. The membership was so informed on October 30, 1964.

By November 1964, plans were underway to hold the first seminar, in 1965. Washington, D. C., was selected as the site and I was given the job of seminar chairman. In the spring of 1965, the first issue of the *Journal* appeared, under the editorship of Les Redman.

The seminar took place, in the International Conference Room, Department of State, on July 13 and 14, and thus the Society was off and running, as an independent and — we know now — viable organization.

ORGANIZING A CLASSIFICATION MANAGEMENT PROGRAM

by Gilbert C. Nowak

The purpose of this paper is to deal with the organizational plan, the managerial function, which can carry a good classification management program through a successful cycle.

A great deal has been written and said as to which department should administer a classification management program. Some companies have it under their contract administration office. Here the contact with the customer is first made and negotiations are conducted that can be beneficial to clarification of classification requirements. Others have placed the organizational function under the administration offices because of the controls that can be afforded to classified inventories. Other companies have it under the organizational control of industrial security because the requirements of both classification and security are contained in the *Industrial Security Manual*. After much discussion with security and classification management personnel as to the experience of administering such a program, I have concluded that the only and most logical place for the organizational placement is in the industrial security office, not as a part of the security function, but as a separate and complementary function. It is important to recognize that the objectives of a classification management program are directed toward the improvement of the security program and are closely allied to attaining cost efficiency and protection of the national interests. The distinction be-

tween classification management and security is that the former determines what has to be protected, identifies this material with proper markings, and manages the classified inventories. Security provides the enforcement of those procedures necessary to protect the classified material. The close interrelationship of the functions of security and classification management will result in close liaison between personnel, and both programs will benefit.

CM Program at Northrop Norair

The classification management program at the Norair Division of the Northrop Corporation was established to centralize procedures in the close-out of classified contracts, concerning retention and disposition of classified material. This function was assumed by the security group and has resulted in a system whereby matters concerning classified inventory at contract close-out are completely handled through the master document accountability station located in the security office. At this station a complete listing is available of accountable documents identified with specific programs. This provides a complete inventory to submit to program managers for retention or destruction determinations. For the past two years this portion of the classification program has functioned successfully and has been commended by our cognizant agency. Early in the program it became evident that the

master document accountability station was the point of control for many operations of the classification management organization. Here documents are linked to contracts, records are maintained showing the special handling and automatic downgrading requirements, and the numerical inventory is recorded. Through this central station the entire picture of classification costs can be ascertained. Beyond the sphere of the master station, the security program takes over, as the concern is then in the handling of the document itself. Accountability in the remote control stations becomes a matter of protecting and controlling the use of the classified document. The managerial process gives way to the enforcement process.

From this beginning our program grew. We established a more positive approach to the interpretation of customer classification requirements. Besides providing personalized classification interpretation, an expanded distribution was made of the DD Form 254s on classified contracts. Our goal in this portion of the program was eventually to develop detailed security classification guides to supplement the DD 254 in our internal operations. The aim was to publish comprehensive company guidance based on approved interpretation of the DD 254, giving a summary of classification requirements in a tailored and easily understandable format. This has been accomplished on the major programs. A third goal was to provide assistance to contract negotiators in determining realistic classification requirements to allow for more accurate funding. It is important that the customer's de-

sires as to classification are clearly understood, and that misinterpretation of guidance does not occur. Realistic savings are made by discussions as to the necessity for classification and changes in levels of classification during contract or proposal performance. The same process applies in providing the subcontractor with the necessary classification guidance. Here the role of the prime becomes the role of the customer. In addition to participating in the negotiations, the classification management personnel must establish channels to be followed by subcontractors to resolve classification questions as they arise.

Personnel Utilized

One of the big problems of organization of the program was the establishment of a workable means so that classification specialists are available to assist employees in their classification decisions when originating new documents. It can be readily seen that in a large facility the age-old problem of size becomes paramount. The number of specialists available has to be consistent with good economy. It was decided at this point to utilize the technical knowledge of personnel already in the facility. It was only necessary to provide them with classification interpretation and guidance. The approach was made through systems engineering on each proposal effort or contract performance, and personnel from data management were designated by the program manager to act as liaison and contact point for classification management. In this way one classification specialist was able to be active and provide assist-

ance through the central offices of various programs at all times. At the initiation of each program, the classification specialist held discussions with the data management personnel to set standards for classification by a thorough examination of the DD 254. These standards were made known, either orally or in writing, to the team managers of the program. In addition, the system of data control was linked to the identification of documents that would eventually be retained in the facility at closeout. This would then provide an easily identifiable list of all classified documents, including confidential ones, that could be utilized on future efforts. It also assists in the preparation of the request for retention to be submitted to the contracting officer. It provides for an orderly destruction of residual classified material, or the required return to the customer if so indicated. The use of data management as the servicing point proved extremely effective in a number of major efforts and provided a smooth flow of day-to-day classification guidance to the employees. When changes or major decisions had to be made, the classification specialist was summoned and a resolution was obtained.

It will be noted that inherent in utilizing data management personnel in the program is the educational program so necessary to the entire structure. The briefings provided to

team managers, written announcements, and classification guides supplement the entire program without disrupting the production process.

Other Benefits to Company

As the classification management program achieves acceptance as it has here at the Norair Division, other facets of a company's business requirements as to classification emerge. Beyond the scope of government classification, especially in the competitive posture, protection of company information will benefit through the classification management program. The system of protection can be the same as the system used by the security program for government classified documents; but the identification and designation of levels of importance of the information to the company bring new problems. The education of management in determining the value of information that affects the company's economic success is becoming a major effort of the program.

Once management is aware of the cost avoidance savings that are actually made through the program and good classification practices are followed, the net gain will result in better respect by the customer for the company. Thus, the classification management function becomes a necessary part of the business systems of good management.

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